

Syllabus Formula Recall Sheet of A2 Physics- A2

物理考纲公式默写

Chapter 12: Motion in a circle

1. Angular velocity: $\omega =$ _____
2. Linear velocity: $v =$ _____
3. Centripetal force (using angular velocity): $F =$ _____
4. Centripetal force (using Linear velocity): $F =$ _____

Chapter 13: Gravitational fields

5. Gravitational force: $F =$ _____
6. Gravitational acceleration: $g =$ _____

Chapter 14: Temperature

7. Temperature conversion (Kelvin to Celsius): $T(K) =$ _____
8. Heat transfer (specific heat Capacity): $Q =$ _____
9. Heat transfer (specific latent heat): $Q =$ _____

Chapter 15: Ideal gases

10. Ideal gas law (using moles): $pV =$ _____
11. Ideal gas law (using molecules): $pV =$ _____
12. Boltzmann constant: $k =$ _____

Chapter 16: Thermodynamics

13. Work done by/on a gas: $W =$ _____
14. Change in internal energy(1st law of Thermodynamics): $\Delta U =$ _____
 - symbol: _____
 - ΔU is _____
 - q is _____
 - W is _____

Chapter 17: Oscillations

15. Displacement in simple harmonic motion: $x =$ _____
16. Total energy in simple harmonic motion: $E =$ _____

Chapter 18: Electric fields

17. Electric force(): $F =$ _____
18. Electric field (using potential difference/ uniformly electric field): $E =$ _____
19. Coulomb's law (force between charges): $F =$ _____
20. Electric field (due to a point charge): $E =$ _____

Chapter 19: Capacitance

21. Capacitance: $C =$ _____

- Unit of C : _____
- $Q_{Total} =$ _____ (*in series*)
- $Q_{Total} =$ _____ (*in parallel*)

23. Energy stored in a capacitor: $W =$ _____

24. Time constant for an RC circuit: $\tau =$ _____

Chapter 20: Magnetic fields

24. Magnetic force (on a current-carrying wire): $F =$ _____

- Unit of B : _____

26. Magnetic force (on a moving charge): $F =$ _____

27. Magnetic flux: $\Phi =$ _____

- Unit of Φ : _____

28. Magnetic flux linkage: $N\Phi =$ _____

29. Electromotive force (Faraday's law): $\epsilon =$ _____

Chapter 21: Alternating currents

29. RMS current: $I_{rms} =$ _____

30. RMS voltage: $V_{rms} =$ _____

Chapter 22: Quantum physics

31. Energy of a photon: $E =$ _____

- $1eV =$ _____ J

32. Momentum of a photon: $p =$ _____

33. Photoelectric effect: _____ = _____

34. De Broglie wavelength: $\lambda =$ _____

35. Energy level transition: _____ = _____

Chapter 23: Nuclear physics

- Particle:
 - α
 - $\beta^- = e$
 - $\beta^+ =$ positron
 - proton
 - neutron

36. Mass-energy equivalence: $E =$ _____

37. Activity of a radioactive sample: $A =$ _____

- Unit of A : _____

Chapter 24: Medical physics

38. Intensity of an X-ray beam (attenuation): $I =$ _____

39. Specific Acoustic Impedance: Z _____

Chapter 25: Astronomy and cosmology

40. Luminosity flux: $F =$ _____

41. Wien's displacement law (proportionality): $\lambda_{max} \propto$ _____

42. Wien's displacement law (equation): $\lambda_{max} T_1 =$ _____

42. Hubble's law: $v =$ _____